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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,225	12/13/2001	Freeman Leigh Rawson III	AUS920010796US1	6315

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EXAMINER

CHANG, ERIC

ART UNIT	PAPER NUMBER
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2116

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/015,225

Applicant(s)

RAWSON, FREEMAN LEIGH

Examiner

Eric Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10,12-18 and 20-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,12-18 and 20-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-2, 4-10, 12-18 and 20-27 are pending.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-2, 4-10, 12-18 and 20-27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,711,691 to Howard.
4. As to claim 1, Howard discloses a method of conserving power consumption in a multi-processor data processing system, comprising: monitoring a workload of the system [12]; distributing the workload asymmetrically to the processors in the system [col. 9, lines 51-60]; determining a number of processors required to process the monitored workload at a predetermined performance criterion [col. 4, lines 33-58]; activating or deactivating processors to conform the number of active processors in the system to the determined number of processors [16, 20]; and processing the workload with the active processors while maintaining the deactivated processors in a reduced power state [col. 4, lines 33-58], wherein deactivating a processor includes selecting a processor for deactivation based on the processor's workload [col. 9, lines 51-60].

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5. As to claim 2, Howard discloses determining the number of processors required comprises determining the minimum number of processors required to achieve the performance criterion [col. 4, lines 33-58].

6. As to claim 4, Howard discloses deactivating a processor includes migrating processes running on a processor selected for deactivation to another processor [502].

7. As to claim 5, Howard discloses deactivating a processor further includes flushing the processor's cache memory before deactivating the processor [506].

8. As to claim 6, Howard discloses deactivating a processor comprises transitioning a processor to the lowest power state supported by the processor [col. 8, lines 59-62].

9. As to claim 7, Howard discloses monitoring the workload comprises determining the demand for CPU cycles [col. 4, lines 33-58].

10. As to claim 8, Howard discloses monitoring the workload includes determining the instantaneous workload periodically and averaging the instantaneous workload data to obtain an average workload [col. 4, lines 59-64].

11. As to claim 9, Howard discloses a data processing system including processor, memory, and I/O means, the system including a sequence of processor executable instructions for

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conserving power, the instructions being stored on a computer readable medium, comprising: computer code means for monitoring a workload of the system [12]; computer code means for distributing the workload asymmetrically to the processors in the system [col. 9, lines 51-60]; computer code means for determining a number of processors required to process the monitored workload at a predetermined performance criterion [col. 4, lines 33-58]; computer code means for activating or deactivating processors to conform the number of active processors in the system to the determined number of processors [16, 20]; and computer code means for processing the workload with the active processors while maintaining the deactivated processors in a reduced power state [col. 4, lines 33-58]; wherein the code means for selecting a processor for deactivation based on the processor's workload [col. 9, lines 51-60].

12. As to claim 10, Howard discloses determining the number of processors required comprises code means for determining the minimum number of processors required to achieve the performance criterion [col. 4, lines 33-58].

13. As to claim 12, Howard discloses deactivating a processor includes code means for migrating processes running on a processor selected for deactivation to another processor [502].

14. As to claim 13, Howard discloses deactivating a processor further includes code means for flushing the processor's cache memory before deactivating the processor [506].

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15. As to claim 14, Howard discloses deactivating a processor comprises code means for transitioning a processor to the lowest power state supported by the processor [col. 8, lines 59-62].

16. As to claim 15, Howard discloses monitoring the workload comprises code means for determining the demand for CPU cycles [col. 4, lines 33-58].

17. As to claim 16, Howard discloses monitoring the workload includes code means for determining the instantaneous workload periodically and averaging the instantaneous workload data to obtain an average workload [col. 4, lines 59-64].

18. As to claim 17, Howard discloses a computer program product comprising a sequence of processor executable instructions for conserving power, the instructions being stored on a computer readable medium, comprising: computer code means for monitoring a workload of the system [12]; computer code means for distributing the workload asymmetrically to the processors in the system [col. 9, lines 51-60]; computer code means for determining a number of processors required to process the monitored workload at a predetermined performance criterion [col. 4, lines 33-58]; computer code means for activating or deactivating processors to conform the number of active processors in the system to the determined number of processors [16, 20]; and computer code means for processing the workload with the active processors while maintaining the deactivated processors in a reduced power state [col. 4, lines 33-58]; wherein the

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code means for selecting a processor for deactivation based on the processor's workload [col. 9, lines 51-60].

19. As to claim 18, Howard discloses determining the number of processors required comprises code means for determining the minimum number of processors required to achieve the performance criterion [col. 4, lines 33-58].

20. As to claim 20, Howard discloses deactivating a processor includes code means for migrating processes running on a processor selected for deactivation to another processor [502].

21. As to claim 21, Howard discloses deactivating a processor further includes code means for flushing the processor's cache memory before deactivating the processor [506].

22. As to claim 22, Howard discloses deactivating a processor comprises code means for transitioning a processor to the lowest power state supported by the processor [col. 8, lines 59-62].

23. As to claim 23, Howard discloses monitoring the workload comprises code means for determining the demand for CPU cycles [col. 4, lines 33-58].

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24. As to claim 24, Howard discloses monitoring the workload includes code means for determining the instantaneous workload periodically and averaging the instantaneous workload data to obtain an average workload [col. 4, lines 59-64].

25. As to claims 25-27, Howard discloses the monitoring of the workload of the system includes triggering the workload monitoring responsive to an asynchronous event selected from among asynchronous events including one or more of the following: initiation of a new process, termination of an executing process, and availability of transaction buffers on the system [col. 16, lines 54-65].

Response to Arguments

26. Applicant's arguments filed December 6, 2006 have been fully considered but they are not persuasive.

27. In the remarks, applicants argued in substance that Howard does not teach or suggest that distributing the workload asymmetrically to the processors in the system. But Howard teaches distributing the workload asymmetrically to the processors in the system [col. 9, lines 51-60], because Howard teaches that particular processors may have light workloads and deactivated as a result. Because Howard teaches that particular processors within the system may have lighter workloads than other processors, Howard teaches that the workload is asymmetrically distributed among the processors of the system.

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28. In the remarks, applicants argued in substance that Howard does not teach or suggest that deactivating a processor includes selecting a processor for deactivation based on the processor's workload. But Howard teaches deactivating a processor includes selecting a processor for deactivation based on the processor's workload [col. 9, lines 51-60], because Howard teaches that particular processors may have light workloads and deactivated as a result. Because Howard teaches deactivating processors within the system that have lighter workloads than other processors, Howard teaches deactivating a processor includes selecting a processor for deactivation based on the processor's workload.

29. In the remarks, applicants argued in substance that Howard does not teach or suggest that triggering the workload monitoring responsive to an asynchronous event selected from among asynchronous events including one or more of the following: initiation of a new process, termination of an executing process, and availability of transaction buffers on the system. But Howard teaches triggering the workload monitoring when a processor has no useful work to perform. Because the termination of the last executing process on a processor results in no useful work for the processor to perform, and Howard teaches that the processor is subsequently selected for possible low power mode [col. 16, lines 54-65], Howard teaches the monitoring is responsive to an asynchronous event selected from among asynchronous events including one or more of the following: initiation of a new process, termination of an executing process, and availability of transaction buffers on the system.

Conclusion

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Chang whose telephone number is (571) 272-3671. The examiner can normally be reached on M-F 9:00-5:30.

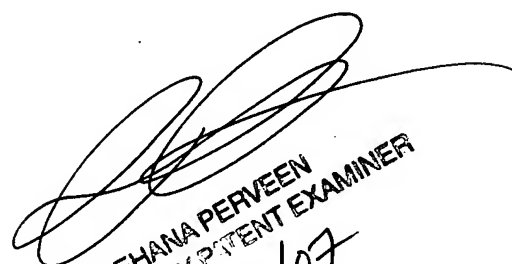
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 19, 2007

ec


REHANA PERVEEN
SUPERVISORY PATENT EXAMINER
3/19/07